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## **Chapter 2: A Critical View on Mixed-Method Approaches to Tourism and Hospitality Research**

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### **Abstract**

Mixed methods research (MMR) represents an alternative methodological approach, combining qualitative and quantitative research styles, and enabling researchers to explore complex phenomena in detail. This chapter provides a critical view of mixed methods research and its application in social science research, with examples from tourism and hospitality used to guide those aiming to undertake mixed-methods research projects. The chapter provides insight into the characteristics of MMR, distinguishing it from a multi-method approach. It also provides a detailed explanation of different MMR designs and highlights the advantages and challenges of adopting a mixed-methods approach. Moreover, the chapter discusses approaches to analysis which are pivotal to MMR design. Finally, the chapter concludes with recommendations for researchers hoping to adopt a mixed-methods approach.

**Keywords:** Mixed-Methods, Research Design, Hospitality Research Design, Tourism Research Design, Social Sciences Research Design, Alternative Research Design

## Introduction

The popularity of mixed methods research (MMR) has grown over recent decades, with its position alongside singular qualitative and quantitative approaches to research now firmly established (Gibson, 2017; Teddlie & Tashakkori, 2009). Serving as a ‘third way,’ a mixed-method approach is not concerned with replacing traditional qualitative or quantitative techniques but instead combines the strengths of each in order to minimize and/or negate any weaknesses therein (Johnson et al., 2007; Khoo-Lattimore et al., 2019). Accordingly, a mixed-method approach to research can be broadly characterized as:

“The type of research in which a researcher or team of researchers combines elements of qualitative and quantitative research approaches (e.g., use of qualitative and quantitative viewpoints, data collection, analysis, inference techniques) for the broad purpose of breadth and depth of understanding and corroboration” (Johnson et al., 2007, p.123).

Nevertheless, while the *combined* deployment of qualitative and quantitative techniques is core to MMR, some ambiguity remains regarding the differences between multi-method and mixed-method approaches to research. In contrast with MMR, multi-method approaches combine multiple qualitative methods (e.g., case studies and ethnography) *or* multiple quantitative methods (e.g., surveys and experiments) (Harrison & Reilly, 2011). Therefore, multi-method research reflects the notion of multiple operationalism favoured by early social science researchers, with this originally introduced to improve the validity of research findings (Campbell & Fiske, 1959). In the 1970s, multi-method approaches evolved, motivated by a desire to convey the potential for triangulation born from the deployment of quantitative and qualitative data sources as a means of cross-validation (Denzin, 1978; Jick, 1979). However, despite the shared concession that using a range of methods can help to strengthen research processes, an emphasis on multiple operationalism, convergent validation, and methodological triangulation is more closely related to a multi-method, as opposed to mixed-method, approach to research (Harrison & Reilly, 2011; Johnson et al., 2007).

Accordingly, MMR extends beyond simple triangulation in pursuit of validation (Creswell, 2014; Johnson & Onwuegbuzie, 2004), serving instead to legitimize studies underpinned by pragmatic philosophical assumptions by integrating both qualitative and quantitative methods to answer research questions that cannot be addressed using a single method (Creswell &

Clark, 2011; Doyle et al., 2009). As such, there is a range of circumstances where a mixed-methods approach proves most appropriate. For example, under conditions where one source of data is considered insufficient or incomplete; initial results require further explanation; or where a research project has multiple phases. To this end, the decision to adopt MMR in pursuit of research aims is often pragmatic, paradigmatically underpinned by a combination of assumptions from potentially incongruous viewpoints. This chapter, therefore, begins by discussing the paradigmatic foundations of MMR prior to discussing the approach itself in greater depth.

### Research Paradigm

MMR is characterized by heated discourse concerning the incongruity between the multiple perspectives required to appropriately deploy a mixed-method design and established understanding of research philosophy (Khoo-Lattimore et al., 2019). Moreover, the complexity of MMR’s paradigmatic foundations is exemplified by how this approach is operationalized in practice; those conducting MMR must embrace ontological, epistemological, and axiological viewpoints from a range of (often competing) methodological traditions (**Table 1**). Accordingly, debate has centered on *whether, how, and the extent to which* research paradigms should be ‘mixed,’ irrespective of the functional benefits of adopting a mixed-method approach.

Criteria	Explanation
<i>Uses of positivism:</i>	Positivists claim that reality is “out there,” capable of being accessed and understood with the right tools, whereas post-positivists believe that reality can never truly be comprehended. As a result, Post-positivists typically use multiple methods to capture ‘reality’ as much as possible.
<i>Acceptance of postmodern sensibilities:</i>	Postmodern researchers argue that the positivist method is one way of telling a story, and that might be no better or no worse than any other method. Therefore, these researchers seek alternative methods for assessing their study. However, positivists and post-positivists contend that what they do is good science, free of individual bias and subjectivity, and they see postmodernism as an attack on reason and truth.
<i>Capturing the individual’s point of view:</i>	Qualitative researchers argue that quantitative researchers may not capture the subject’s view because they trust empirical materials. In response, some quantitative researchers consider qualitative studies as less objective.
<i>Examining the constraints of everyday life:</i>	Quantitative scholars rely on probabilities derived from the study of via randomization, whereas qualitative researchers seek a case-based position that directs their attention to the particular cases.

**Table 1. Competing characteristics of MMR (developed by authors based on Creswell (2014), Guba & Lincoln (2005), and Harrison & Reilly (2011))**

Given the core differences in research philosophy outlined in **Table 1**, some scholars go so far as to advocate against mixing research paradigms and subsequent methodological strategies entirely, with this perspective on MMR captured by the moniker “incompatibility

thesis” (Guba & Lincoln, 2005). Accordingly, this perspective contends that the two prevailing research paradigms (positivism and constructivism) are fundamentally incompatible, with irrevocable ontological, epistemological, and axiological differences. Furthermore, those adopting this perspective suggest that the diversity in views characteristic of positivism and constructivism are fundamentally incompatible to reasoning (e.g., deductive vs. inductive), legitimizing knowledge, generalizing findings (e.g., nomothetic vs. ideographic statements) and accepting causal relations (Bryman, 2006b), further stressing the incompatibility of MMR design more generally.

Nevertheless, two main research paradigms are typically adopted to justify an MMR approach to social science research, with this also evidenced across hospitality and tourism studies. First, *pragmatism* (problem-based or objective-based) is proposed as a paradigm capable of prompting mutual dialogue between the (apparent) empirical and theoretical/philosophical incongruences core to MMR (Khoo-Lattimore et al., 2019). A pragmatic underpinning challenges the notion that “predetermined frameworks” form truth and knowledge (Easterby-Smith et al., 2012, p.32) and, therefore, researchers can use any methodological approach to tackle research questions and problems (Maarouf, 2019).

Methodologically, pragmatism contends that a research project can sit within a inductive or deductive research phase at different intervals (Baggio & Mariani, 2019; Teddlie & Tashakkori, 2009). Accordingly, an ‘abductive’ approach to reasoning is proposed as a practical alternative, with this used to support a process of inquiry that assesses previous inductive results (Morgan, 2007). At this abductive stage, the goal is to explore the data, identify patterns, and suggest plausible hypotheses via discreet categories. Subsequently, the deductive approach enables forming logical and testable propositions based upon plausible premises, with inductive reasoning serving to approximate the truth in parallel to pragmatically guiding the general inquiry (Teddlie & Tashakkori, 2009). This abductive approach is employed when sequentially integrating qualitative and quantitative methods, serving as the philosophical bedrock of much MMR design (Baggio & Mariani, 2019; Morgan, 2007).

Second, *post-positivist* perspectives can serve as a response to the shortcomings of positivism. Generally, a positivist philosophy encourages researchers to perceive reality objectively, leaving little room for the subjective interpretation of results (Hudson & Ozanne,

1988). Accordingly, Ackroyd and Fleetwood (2000) identify the functional drawbacks of reducing research philosophy to two opposed perspectives:

“We arrive at the commonly held position that there are two basic perspectives on offer: either the world is objectively and unproblematically available and capable of being known by the systematic application of the empirical techniques common to positivism, or not knowable objectively at all; and in the place of claims to objectivity, we find that what is known is merely the product of discourses” Ackroyd and Fleetwood (2000, pp.3-4).

As such, while positivism assumes that causal relationships among variables can be verified, an alternative post-positivist approach suggests that reality can only be known probabilistically, making the falsification of null hypotheses, not the verification of hypotheses, the order of the day (Harris, 2008).

Post-positivism theory concedes that it is impossible for scholars to be value-free while retaining the goal of observable reality central to positivism. Thus, Post-positivists openly reflect on the assumptions, methods, and results shaping their research (Schurr, 2007). From an ontological viewpoint, one of the most common post-positivist perspectives is that of critical realism, which Schurr (2007, pp.165-166) defines as “[a perspective in which] reality exists in time and space independent of the human mind, maybe observed, and is more enduring than our perception of it.” Critical realism contends that researcher observation is vulnerable to mistakes and that theoretical foundations are not set in stone but instead open to revision as studies progress (Trochim, 2006). Accordingly, critical realism suggests that objectivity can be gained through the collective critique of extant work (Johnson & Duberley, 2003) while also demonstrating no favor towards different data collection methods beyond those considered most appropriate to the research aim (Ackroyd & Fleetwood, 2000).

As such, post-positivist perspectives contend that the adoption of intensive qualitative methods can help to reveal individual motives, while extensive quantitative methods can prove crucial in illuminating the more general characteristics of any phenomena under investigation. Therefore, this perspective is consistent with the functional aspects of MMR design, with this approach allowing the researcher to adequately examine both observable and non-observable conditions (Ackroyd & Fleetwood, 2000). While scholars have often traditionally felt obliged to use single quantitative or single qualitative methods, recent moves towards pragmatism and post-positivism argue against the polarisation of research along philosophical lines (Ercikan & Roth, 2006). Nevertheless, as steadfast adherence to a sole research paradigm can encourage inherent bias (Deshpande, 1983), some researchers

continue to challenge methodological norms evidenced by a concerted shift towards adopting MMR design. To this end, acknowledging the ever-evolving and multi-layered nature of research contexts, the increased adoption of MMR has led to significant epistemological and ontological advancement in hospitality and tourism scholarship in recent decades (Khoo-Lattimore et al., 2019).

### **Reasons to Adopt an MMR**

Generally, research problems likely to benefit from a mixed-method approach are those in which one data source is likely to prove insufficient. However, MMR is appropriate when results are likely to require further explanation; experimental findings require generalization; the core experimental design must be extended upon or improved; multiple cases must be compared; and participant involvement is required. Over recent years, authors adopting MMR have raised a range of reasons for doing so (also referred to as ‘rationales’) (Bryman, 2006a). This section discusses the three core rationales underpinning MMR design.

#### *1- Corroboration*

Quantitative and qualitative data differ in how they respectively provide richness of understanding or a general understanding of phenomena. Qualitative and quantitative methods capture different perspectives, yet each has its limitations. For example, results emerging from qualitative research are typically ungeneralizable. Conversely, while quantitative studies typically draw upon large sample sizes, detailed understanding of phenomena at an individual level is often limited. Therefore, the drawbacks of one method are balanced with the strengths of the other, with a combined qualitative and quantitative approach capable of providing a more holistic understanding of the phenomena under investigation than either approach in isolation. Further, under some circumstances, using one data source alone may prove insufficient; one view may not tell the full story. Under such circumstances, using a solely qualitative or quantitative approach to address a research problem may prove insufficient, and thus an MMR design can serve to strengthen results through corroboration.

#### *2- Explaining Initial Results*

In some instances, the results of a study may not provide a complete understanding of a research problem, with further explanation required to adequately identify core findings. Under such circumstances, mixed methods can be used, with a second study employed to better-explain primary inquiry results (Creswell & Clark, 2018). A typical situation in which

this challenge emerges is when quantitative findings require further clarification with regards to how they apply in practice (Khoo-Lattimore et al., 2019). For example, while experimental studies provide quantitative results regarding the prevalence of specific outcomes, a subsequent qualitative study can be used to provide greater insight into the process leading to these outcomes, alongside their likely impact at an individual level (Cash et al., 2016). On the other hand, qualitative data can be used for studies investigating emerging phenomena as the initial means of in-depth exploration, with subsequent quantitative data deployed to better-understand its impacts, mechanisms, and effects at a larger scale (Gannon et al., 2019). Accordingly, qualitative and quantitative methods can work together to provide a more robust, detailed explanation of initial research results irrespective of the order of deployment.

### *3- To administer measurement instruments*

At times, researchers may not be able to fully identify or articulate the core questions under investigation, measurement variables, and/or any theories underpinning the study (Creswell & Clark, 2018). MMR is ideal under such circumstances, where it is recommended to start by exploring via qualitative data to better-understand the variables, theories, or questions which require further research. Afterwards, a quantitative study can test and generalize nascent findings captured in the exploration phase. This mixed-method research design encourages the administration of more accurate quantitative instruments, with the initial qualitative stage capable of filling a researcher's knowledge gaps.

## **Types of Mixed Methods Designs**

While the rationale for adopting a mixed-method approach is clear and consistent, there remains debate about how this is enacted in practice. Accordingly, there are four core mixed-method designs: convergent parallel design, explanatory sequential design, exploratory sequential design, and an embedded design (Creswell & Clark, 2011) (**Table 2**). Each is classified under two main categories: sequential or concurrent (Harrison & Reilly, 2011). When employing a sequential design, researchers start with one data collection method and then, following initial analysis, continue with another before reaching a final analysis stage. In contrast, researchers conduct research activities simultaneously when conducting MMR framed by concurrent design (Creswell & Clark, 2011; Teddlie & Tashakkori, 2009).



Design	Timing	Merging
Convergent Parallel	Concurrent: quantitative and qualitative at the same time	Merging data during interpretation or analysis
Embedded	Concurrent or sequential	Embed one type of data within a larger design using the other type of data
Explanatory	Sequential: quantitative followed by qualitative	Connect data between the two phases
Exploratory	Sequential: qualitative followed by quantitative	Connect data between the two phases

**Table 2: MMR Designs (developed by authors based on Creswell & Clark (2011) and Teddlie & Tashakkori (2009))**

## Choice of Mixed Methods Design

When adopting a mixed-methods design there are some aspects to consider:

### 1. *The timing*

Researchers must consider timing regarding the collection of qualitative and quantitative data: will this be conducted in phases (sequentially) or gathered at the same time (concurrently)? If data are collected sequentially, the qualitative OR quantitative stage can be enacted first. However, this is contingent upon the researcher's original intent and the core aim of their study (Creswell & Clark, 2011; Teddlie & Tashakkori, 2009). For example, if a research project comprises two studies, with the second study informed by the results of the first, then a sequential research design is most appropriate because there is no possibility of running both strands simultaneously. To illustrate, when qualitative data are collected first, the intent is to explore the topic with participants, with this then expanded through a second phase in which data are collected from a larger number of people (Creswell, 2009). However, when data are collected concurrently, both quantitative and qualitative data are gathered simultaneously, and the implementation of each is simultaneous (Teddlie & Tashakkori, 2009).

### 2. *The priority of the respective strands*

It is also crucial to consider the weight or priority of qualitative or quantitative methods enacted within a focal study. This is categorized as follows: equal priority, quantitative priority, or qualitative priority (Teddlie & Tashakkori, 2009). Researchers may perceive both the qualitative and quantitative studies underpinning their MMR as holding equal priority as both play an equally important role in addressing the research problem (Creswell & Clark, 2011). Conversely, the prioritization of one type of study (qualitative or quantitative) depends

on (a) the interests of the researcher, (b) the audience for the study, and (c) what the investigator seeks to emphasize in the study (Teddlie & Tashakkori, 2009). To illustrate, prioritization in MMR is dependent on whether quantitative or qualitative information is emphasized first, the extent of the treatment of one type of data or the other in the project, or the use of primarily an inductive (i.e., generating themes via qualitative means) or a deductive approach (i.e., testing a theory) (Creswell, 2014; Creswell & Clark, 2011).

### 3. *The level of interaction*

This refers to whether the qualitative and quantitative data are connected, kept separate, or merged (Creswell & Clark, 2018). In other words, the level of interaction between different datasets can be either independent or interactive (Creswell & Clark, 2011). When the design of a study (either qualitative or quantitative) depends on the results of another study (again qualitative or quantitative), then this is a connected level of interaction (Creswell & Clark, 2011; Teddlie & Tashakkori, 2009). In MMR, connected interaction is often demonstrated between the results of data analysis pertaining to the first phase of the research, with this used to help design data collection enacted during the second phase of research (Creswell, 2009). For example, Azer & Alexander (2018) conceptualized forms of negative online reviews in a qualitative study before using these newly-conceptualized categories in a quantitative study to investigate their impacts on other actors' attitudes and behavioral intentions (Azer & Alexander, 2020a, 2020b).

However, in other instances, any interaction between data emerging from different study phases can be avoided, with this separation used strategically to shape MMR design (Teddlie & Tashakkori, 2009). For example, in a two-phase project that begins with a quantitative phase, the data analysis and study results can be used to identify participants for qualitative data collection in a follow-up phase. Further, researchers may wish to merge qualitative and quantitative data (Creswell, 2009). For example, the researcher might collect both quantitative and qualitative data concurrently and merge the two databases by transforming qualitative themes into counts and comparing these counts with descriptive quantitative data. Finally, the researcher may avoid merged, connected, AND separated interaction between strands. Instead, the researcher can embed a secondary form of data within a larger study (Creswell & Clark, 2018). For example, some studies may have a primary aim to collect one form of data yet draw upon another to provide supporting information.

## **Application of MMR Design: The Example of Scale development**

Scale development is one of the core approaches for associating abstract concept(s) (i.e., scale or measurement constructs) to empirical indicants. It is concerned with the accuracy of a measurement instrument and the concepts it measures rather than the truthfulness of the measurement. Researchers must first define the concept (i.e., scale or measurement construct) and its possible sub-components (i.e., sub-dimensions of the measurement construct). Proper measurement of constructs is of utmost significance in behavioral and social sciences and represents an important field of inquiry (Churchill, 1979; Netemeyer et al., 2003). Researchers apply combinations of several different qualitative and quantitative methods in order to develop practical scales, with this extending to tourism and hospitality research (e.g., Dedeoglu et al., 2020; Hosany & Gilbert, 2010; Taheri et al., 2014; Taheri et al., 2017; Taheri et al., 2018). Typically, five sequential steps are required when conducting scale development, with each step drawing upon several different methods (Churchill, 1979; Netemeyer et al., 2003). The scale development process is, therefore, a pertinent example of MMR in practice, capturing multiple strands of research while also demonstrating the importance of interaction therein:

1. The domain definition step: “the literature should indicate how the variable has been defined previously and how many dimensions or components it has” (Churchill, 1979, p.67).
2. Item generation step: deductive (i.e., develop items based on existing theory), inductive (i.e., develop items based on experience), or hybrid (i.e., a combination of both inductive and deductive). In-depth interviews, focus groups, Delphi and/or panel rating methods are common.
3. Initial item reduction step: uses initial quantitative questionnaire (and exploratory factor analysis) to identify potential sub-scales.
4. Initial validation step: uses the main quantitative questionnaire (and confirmatory factor analysis) to validate the findings from Step 4. This step confirms factor structure by examining the statistical significance of the model and relationships between subscales and items (i.e., dimensionality).
5. Final validation or replication step: uses a quantitative follow-up questionnaire with different samples and normally from different context/culture (but also test-retest reliability assessment) to validate findings from Step 5.

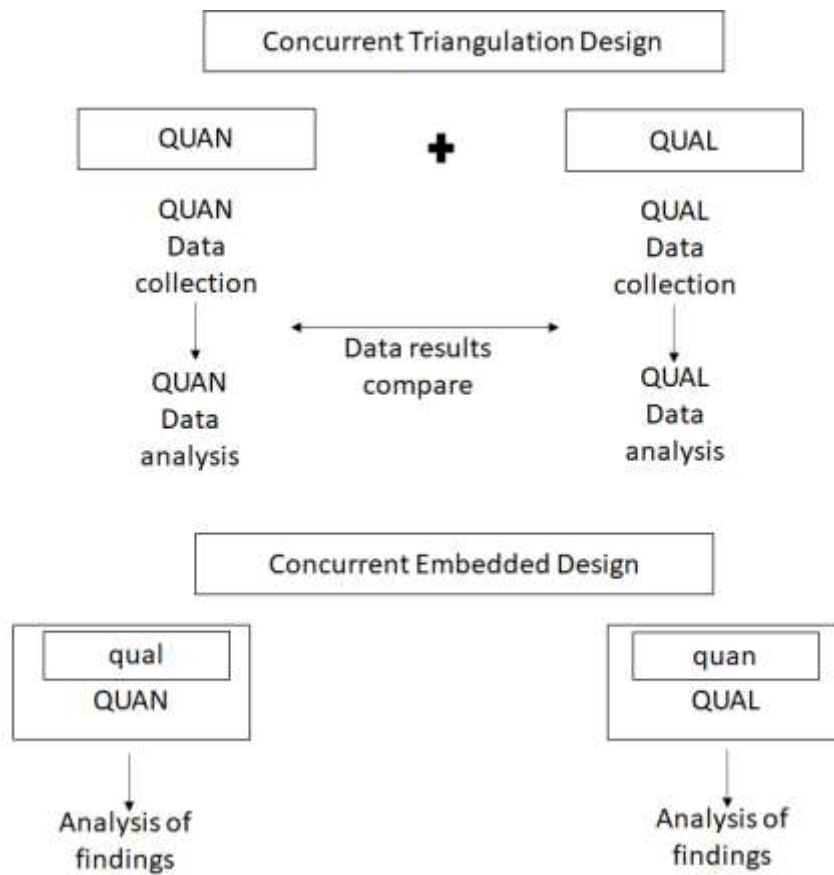
## Notations and Visual Models of Mixed Methods

Different notations help readers identify the type of mixed method design adopted by a given study. Uppercase and lowercase letters are used to identify the priority of studies within MMR. For example, QUAL for qualitative, QUAN for quantitative arrows identifies the sequential direction of the studies, with the plus sign (+) used to identify the deployment of concurrent studies. The following table illustrates the meaning of key notations used to facilitate understanding of and clarify the nature of the adoption and use of MMR design (Table 3).

Notation	Meaning of the Notation
<b>QUAN or quan</b>	Quantitative method
<b>QUAL or qual</b>	Qualitative method
<b>Uppercase Letters:</b> QUAN or QUAL	Qualitative or quantitative methods are prioritized in the design
<b>Lowercase Letters:</b> quan or qual	Qualitative or quantitative methods have lesser priority in the design
<b>Plus Sign</b> QUAN + QUAL	Concurrent MMR: quantitative and qualitative strands conducted concurrently
<b>Arrow:</b> QUAL → QUAN	Sequential MMR. A quantitative study follows and builds upon a qualitative one
<b>Parentheses:</b> QUAN(qual)	A qualitative method is embedded within a large quantitative design
<b>Double Arrows:</b> QUAL → ← QUAL	methods are implemented in a recursive process

**Table 3: Notations of Mixed Methods (Azer, 2018, p. 258)**

Accordingly, when writing-up MMR, methodology sections should contain a description and visual model of the mixed-method approach followed (Creswell & Clark, 2018). **Figure 2** provides examples of visual models which represent the common MMR designs (**Table 2**).



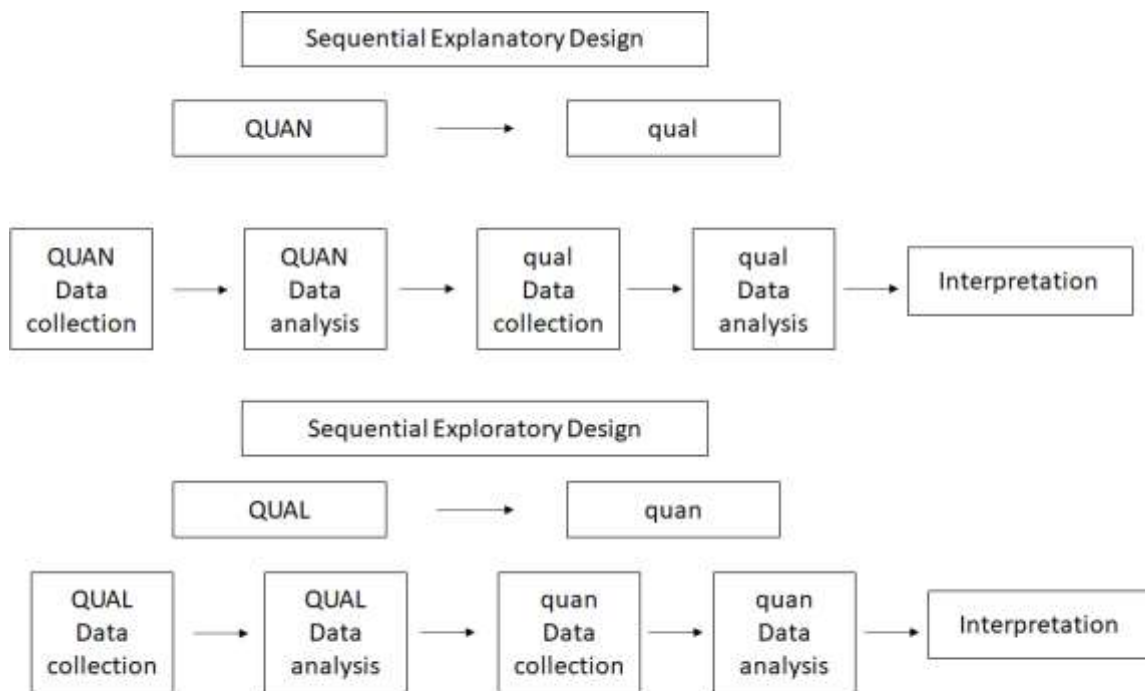


Figure 2: Visual models of mixed methods designs (Creswell, 2009, pp. 209 - 210)

### MMR rigor

When evaluating the rigor of MMR, it is typically apposite to assess how rigorous each phase (e.g., qualitative and quantitative) is. However, such an assessment does not necessarily demonstrate the rigor of the method adopted and enacted via MMR as a whole, as it overlooks the integration of multiple methods and whether each works incongruently in pursuit of the research aim. As such, to help authors understand rigor within MMR, Reilly and Jones (2017) developed elements guidelines for assessing rigor regarding the qualitative and quantitative stages of MMR (**Table 4**).

<b>Criteria</b>	<b>High</b>	<b>Medium</b>	<b>Low</b>
Data collection	Formal: Uses MMR strategies to design and conduct data collection	Informal: collects quantitative and qualitative data but overlooks the importance of MMR design more generally.	Single-method primacy. No discussion of multiple methods.
Data analysis	Multiple sources of data are analyzed together. The advantages of each method are recognized, with this used to offset methodological flaws therein.	All collected data, across both types, is analyzed. However, support for each phase of data collection is poor.	Relies upon one method of analysis. Analysis of different types of data is not linked.
Data integration	Types of data are mixed following the research design adopted. Data and findings are displayed jointly.	There is a degree of integration, but how each type of data interacts is overlooked regarding the depth of discussion.	Data is not integrated. Some collected data is not presented.
Mixed methods design type	Acknowledges its position as MMR and identifies the type of design adopted (e.g., concurrent embedded). Incorporates a figure or model to demonstrate the MMR design visually.	Offers insight into how each type of data was collected and methodology adopted more generally.	Descriptively addresses the interaction between dominant and secondary research phases (e.g., 'interviews helped develop our questionnaire')
Elements of writing	Demonstrates understanding of contemporary MMR literature. Core work is cited comprehensively – both methodological literature and examples of MMR within the study field. In addition, it is clear regarding signposting the MMR nature of the study (e.g., title, keywords, abstract, method, etc.).	Acknowledges that it is MMR in nature but does not cite relevant studies. Similar articles across the discipline are cited, though not necessarily with clarity regarding the methodological approach. Failing to cite the mixed methods literature. MMR nature is unclear at first glance (e.g., reference to MMR is missing in the title, keywords, abstract, etc.)	Discussion of the MMR approach is not provided.
The rationale for employing mixed methods	The overall rationale for undertaking MMR is provided. This is extended to show relevance to the study's research question. Finally, the value of adopting an MMR approach specific to the research context is provided.	It is clear with regards to why multiple types of data are used. However, does not provide the rationale for using MMR design within the context of the study.	The rationale is missing or unclear.

**Table 4. Guidelines for Evaluating Rigor within MMR (adapted from Reilly & Jones, 2017)**

### **Advantages of Mixed-Methods**

MMR allows researchers to harness the strengths and offset the weaknesses of both quantitative and qualitative research (Creswell & Clark, 2018). For example, quantitative research is typically argued to be weak regarding encouraging researchers to understand the context under investigation, particularly under circumstances where participant voices are typically overlooked. Fortunately, when adopting an MMR approach, the qualitative research phase can make up for these weaknesses. However, it has its deficiencies, such as the bias born from the researchers' interpretations and the limited generalizability of findings. Accordingly, the advantages of one approach can offset the flaws of the other (Doyle et al.,

2009; Morgan, 2007). This is true of the researcher, too; conducting mixed methods research enhances the skills of researchers and increases their expertise in a wider range of research methods.

Using mixed methods, researchers can employ different data collection tools without feeling constrained by those typically concomitant with qualitative or quantitative research (Teddlie & Tashakkori, 2009). MMR thus bridges the often-combative rift between quantitative and qualitative scholars (Creswell & Clark, 2018), with this proving useful for social, behavioral, and human science researchers. Accordingly, MMR encourages researchers to draw upon multiple philosophical paradigms rather than limit themselves to associating certain paradigms with distinct approaches to research (Johnson et al., 2007). Importantly, MMR enables researchers to combine inductive and deductive logic by adopting an abductive perspective (Morgan, 2007); encouraging paradigmatic thought that embraces and bridges quantitative and qualitative research, such as pragmatism (Morgan, 2007). Finally, and most practically, MMR provides scholars with a greater opportunity to produce a range of outputs (e.g., a quantitative article, a qualitative article, and a methodological article) from a single study (Creswell & Clark, 2018).

### **Challenges of conducting mixed-method approaches**

There are also several difficulties in undertaking MMR. This includes challenges associated with developing conceptual models from multi-source data, concerns regarding resource intensity (both time and financial), and the possibility of researcher bias. According to Creswell and Clark (2018), the core challenges of conducting MMR are highlighted in **Table 5**.



<b>Challenge</b>	<b>How to overcome?</b>
<b>Ethical considerations</b>	Researchers must acknowledge, understand, and address ethical concerns regarding undertaking research with human subjects.
<b>Researchers' skills</b>	It is recommended that researchers develop skills concerning both quantitative and qualitative research. Solid foundations in this regard allow researchers to undertake MMR. At worst, those undertaking MMR must understand data collection and analysis techniques associated with quantitative and qualitative research.
<b>Time and resources</b>	Reflect on whether MMR is appropriate given time constraints and resources. MMR involves collecting multiple sources and forms of data with associated resource constraints. Further, analysis of multiple types of data can be time-consuming and costly. Therefore, researchers must be aware of the time required to gain approval, reach participants, collect and analyse data, analyze, and integrate results from multiple study phases. The complexity of this approach and the associated resource intensity is contingent upon whether MMR adopts a single-phase, two-phase, or multi-phase design.
<b>Educating others about the value of Mixed Methods</b>	MMR is considered a contemporary methodology by some, with others holding misconceptions about mixed methods more generally. Thus, it may prove crucial to educate others on the nature of MMR. This can be achieved by identifying the exemplary deployment of MMR across extant literature and signposting peers accordingly.

**Table 5: Challenges of conducting Mixed Methods (adapted from Creswell and Clark (2018))**

### **Approaches to Analysis**

Mixed-method data analysis and interpretation approaches can take a non-integrative approach or a separate analysis with some integration during the interpretation or integration during both the analysis and interpretation (Greene et al., 1989). Typically, quantitative and qualitative data are analyzed separately within MMR before combining data and results (Creswell & Clark, 2011). Although mixed method researchers do not always combine their findings (Bryman, 2006a, 2007), a lack of integration can limit the importance of subsequent findings. Furthermore, integrating quantitative and qualitative findings can potentially offer valuable insights that researchers could not otherwise discover (Bryman, 2007). Nevertheless, when analyzing MMR data, there remains a potential barrier to integration related to the “incompatibility thesis” debate discussed earlier. In order to preclude any potential problems regarding this point, no opportunities to ‘quantitize qualitative data or the opposite are considered in this thesis (Bryman, 2007; Khoo-Lattimore et al., 2019).

Integration is pivotal within MMR design as different methodological approaches contribute to understanding a complex phenomenon interdependently (Caracelli & Greene, 1993). For

example, when applying SED, the analysis from the second study should be dependent on that of the first, or otherwise, it would not be an instance of sequential mixed data analysis (Teddlie & Tashakkori, 2009). In addition, the quantitative phase validates any generated themes from the qualitative phase (Creswell, 2014; Teddlie & Tashakkori, 2009).

### MMR in Hospitality and Tourism

Innovative mixed-method data collection and analysis has been employed to investigate phenomena across social science research, with hospitality and tourism research proving no different. Therein, several authors have adopted a mixed-method approach to, for example, study traveler behaviors in online reviews (Azer & Alexander, 2018; Wei et al., 2013), destination image perception (Hunter & Suh, 2007), develop place brand models (Hanna & Rowley, 2015), investigate culture in tourism research (Ryan & Gu, 2010; Weiler & Yu, 2007), and empirically examine pragmatism in tourism research (Pansiri, 2006). **Table 6** illustrates some recent examples of MMR across the field.

Authors	Methods	Research Purpose
Jahandideh et al. (2014)	Survey and interviews and Delphi method	This study combines Hofstede's (1980, 2001) and Schwartz's (2006) cultural dimensions to form a new theoretical model examining cross-cultural consumer complaint behavior. The results address the implicit assumption in previous cross-cultural studies that Asian consumers are homogeneous in their behavior, revealing a significant difference in Arab and Chinese consumer complaint behavior.
Wells et al. (2015)	Survey and interviews	This study sheds light on the antecedents of employee environmental behavior and the effects of a social marketing intervention in a tourism organization using a mixed-methods longitudinal approach.
Azer (2018)	Netnography followed by experimental studies	Conceptualize forms and triggers of negatively-valenced influencing behavior on TripAdvisor's online reviews and their impacts on travelers attitudinal and behavioral outcomes
Gannon et al. (2019)	Survey and interviews	Investigate how experiential purchase quality influences experience self-connection and braggart word-of-mouth for both first-time and repeat visitors,
Taheri and Thompson (2020)	Survey and interviews	This study examines how ski resorts can manage sustainable events while also balancing the needs of consumers and local workers
Taheri et al. (2021a)	Survey and interviews	This paper incorporates two complementary studies, one focusing on value creation, the other on perceived value in medical tourism.
Taheri et al. (2021b)	Survey and interviews	This study investigates whether the antecedents of co-creation influence braggart word-of-mouth (WoM) in a participative leisure context, theorizing the concept of co-created food wellbeing and highlighting implications for interactive experience co-design.

**Table 6: Recent Tourism and Hospitality studies adopting Mixed/Multi Methods (developed by authors)**

## **Concluding remarks**

This chapter provides a critical view of MMR adoption within social science research more generally, with some specific examples pertaining to the tourism and hospitality disciplines. The chapter provides insight into the characteristics of MMR, demonstrating how it differs from a multi-method approach. By briefly discussing the underpinning characteristics of two core philosophical paradigms that support an MMR approach, this chapter encourages researchers to consider a range of aspects before deciding to adopt mixed methods in pursuit of research objectives. The rationale for adopting MMR is likely to shape research design. Accordingly, researchers are recommended to consider whether the central purpose of adopting a mixed-method approach is based on a desire to corroborate results, explain initial results, or for the robust administration of quantitative research instruments.

This chapter also explains different MMR designs, demonstrating key differences therein. Beyond the nature of the research problem, other factors influence MMR design. First, the timing of each study phase; it is recommended that the researchers consider the timing factor very specifically and decide whether different methods can be enacted simultaneously, or is it crucial for the study to be phased and sequential? Moreover, it is recommended that researchers determine whether their research problem is best addressed using concurrent, embedded, explanatory, or exploratory designs. Second, the priority of each phase is important; researchers are therefore recommended to decide whether greater importance is placed upon the qualitative or the quantitative phase as this will determine which design they should follow. Third, it is recommended that researchers determine the interaction level between each strand of research; should data be connected, kept separate, or merged at the analysis stage? In visualizing this, this chapter also provides insight into the models and notations used when presenting MMR.

It is also recommended that researchers consider both the advantages and the challenges associated with MMR. This chapter discusses the advantages of adopting a mixed-method approach (e.g., one method's strengths counterbalance the weak points of another; corroboration of evidence; being well-suited for interdisciplinary research and adopting multiple philosophical perspectives to guide the inquiry). However, it also recognizes that MMR can be challenging and resource-intensive and that researchers must possess an appropriate range of skills, time, and resources to conduct MMR effectively. Finally, the

chapter discusses approaches to analysis, emphasizing that researchers should consider that integration is pivotal in MMR design as different methodological approaches contribute to understanding a complex phenomenon interdependently, and that lack of integration delimits the chances to make the most of collected data.

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